

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO.

WASTE DISCHARGE REQUIREMENTS  
FOR  
BAKER COMMODITIES, INC.  
HANFORD HIDE SKINNING AND HIDE CURING FACILITY  
KINGS COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. Baker Commodities, Inc. (hereafter Discharger), a Delaware corporation, owns and operates a dead cow and calf skinning and hide salt curing facility (Facility). The 160-acre Facility is at 7480 Hanford Armona Road, approximately 2 miles east of the City of Hanford. The property is described by Kings County Assessor's Parcel Nos. 016-070-12, 016-070-13, and 016-070-15 and is in Section 33, T18S, R22E, MDB&M, as shown on [Attachment A](#), which is incorporated herein and made a part of this Order.
2. The Facility has operated since at least 1964 and discharged industrial wastes to land the entire period without waste discharge requirements. The Discharger submitted a Report of Waste Discharge (RWD) in July 1996 after Regional Board staff found the Facility operating. In September 2000, the Discharger submitted a revised RWD in support of an increase in discharge associated with a complete upgrade of the Facility (i.e., new buildings, equipment, etc.). The September 2000 RWD proposed continued use of three existing unlined lagoons constructed in the early 1970s to store hide skinning process wastewater. Operations moved into the newly constructed Facility in January 2002. In February 2003, the Discharger submitted a second revised RWD (to respond to Regional Board staff comments regarding the inadequacy of the existing unlined lagoons in preventing waste constituents from migrating into groundwater) that proposes to construct three new lined treatment lagoons.
3. Dead cows and calves are trucked to the Facility from dairies operating in Kings and surrounding counties. The hides are removed from the carcasses during the skinning operation. Hides are sent to a hide curing room while carcasses are chopped up and loaded into trucks for transport to Baker Commodities' rendering plant near Kerman. Other types of dead animals (e.g., swine, poultry) are accepted at the Facility where they are loaded into trucks and transported to the Kerman rendering plant. The RWD estimates that approximately 36,000 tons of material were transported offsite for rendering in 2003. The Discharger projected then that growth in the dairy industry in Kings and surrounding counties will result in increasing processing rates of dead stock over the next several years.
4. Hide skinning wastewater is generated from the release of bodily fluids during the skinning process and by washing down truck beds, facility floors, and equipment; and from the rinsing of carcasses and hides. The skinning wash water and animal fluids are collected via floor drains and discharged to a mechanical catch basin that provides gravity separation of lighter-than-water solids and heavier-than-water solids. Recovered lighter-than-water solids (e.g., grease) are rendered at Baker Commodities' Kerman facility. Grit in this document refers to heavier-than-water solids collected

from the mechanical catch basin. Recovered grit is incorporated into the soils of the Facility's onsite land application area. Hide skinning wastewater from the mechanical catch basin is pumped to Lagoon No. 1, the first of three 50 x 80 x 10 foot in-series unlined lagoons. The last lagoon is pumped and mixed with irrigation well water and Lakeside Irrigation Water District canal water when the crops on the Facility's 124-acre land application area need to be irrigated.

5. Brine waste is generated from the hide curing process when freshly skinned hides salted with rock salt (i.e., sodium chloride, NaCl) drain highly saline liquid comprised of salt mixed with moisture from the hides. When Regional Board staff inspected the Facility on 3 November 2000, no physical system segregated brine waste generated in the curing process from hide skinning wastewater (the September 2000 and July 1996 RWDs reported segregation).
6. A sample of wastewater held in the unlined lagoons (i.e., hide skinning wastewater combined with brine waste) collected by staff during the 3 November 2000 inspection yielded a chloride concentration of 4,000 mg/L. In addition, twenty-five internal laboratory analyses performed by the Discharger on the sodium chloride content of wastewater held in the unlined lagoons between 1995 and 1997 as submitted on 6 November 2000 via fax indicate a sodium chloride content of between 2,000 and 12,700 mg/L (average content of 5,600 mg/L). The high chloride content reflects the brine waste.
7. Between February 2001 and continuing through December 2001, interim salt control measures were implemented by the Discharger to segregate brine waste from hide skinning wastewater. These measures included laying down plastic sheeting to contain the brine waste and directly pumping collected liquid brine into a tanker truck for transport to Baker Commodities' Los Angeles facility. In the Los Angeles facility, the brine waste was and continues to be discharged to the sewage collection system of a publicly owned treatment works with an ocean outfall.
8. Since the opening of the new Facility in January 2002, salting of hides has occurred in an area physically and hydraulically separated from the skinning area. Separation of these processing areas prevents commingling of salting wastewater with hide skinning wastewater. Within the hide curing area, liquid brine waste is directed manually to in-floor sumps using squeegees. A handheld pump is used to periodically pump out the sumps into a 10,000-gallon above-ground plastic brine holding tank in the rear of the building just outside of the curing area. Approximately every ten days, 4,000 gallons of brine waste are pumped from the holding tank into a tanker truck and transported to Baker Commodities' Los Angeles facility and discharged to the sewer system. The RWD indicates that 140,000 gallons of brine waste were transported to the Los Angeles facility in 2002.
9. Self-monitoring data from January 2002 to August 2005 characterize the salinity component of the hide skinning wastewater as follows:

<u>Constituent / Parameter</u>	<u>Units</u>	<u>Value</u>
Electrical Conductivity	µmhos/cm	1884
Total Dissolved Solids (TDS)	mg/L	1512

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<u>Constituent / Parameter</u>	<u>Units</u>	<u>Value</u>
Volatile Dissolved Solids (VDS)	mg/L	968
Fixed Dissolved Solids (FDS)	mg/L	551
Sodium	mg/L	143
Chloride	mg/L	114

10. Self-monitoring data from January 2002 to August 2005 characterize the organic component of untreated hide skinning wastewater as follows:

<u>Constituent / Parameter</u>	<u>Units</u>	<u>Average</u>
BOD <sub>5</sub> <sup>1</sup>	mg/L	4086
Total Kjeldahl Nitrogen (TKN)	mg/L	466

<sup>1</sup> 5-day, 20°C biochemical oxygen demand

11. The Discharger proposes to construct three lined lagoons in series to treat and control hide skinning wastewater. The Discharger's February 2003 RWD contains a waste stabilization lagoon engineering design report. The proposed design uses different configurations and geometries for each of the three lagoons to optimize treatment at a design flow rate of 27,000 gpd. The primary lagoon is deep enough to allow settleable solids to collect at the bottom without interfering with treatment and a large enough volume for a hydraulic retention time of approximately 60 days. The secondary lagoon is relatively shallow to allow for volatilization of ammonia. The third pond functions as a storage pond and allows for greater efficiency by allowing the primary and secondary ponds to be maintained at a constant operating level while providing some additional treatment by increasing hydraulic retention times. The proposed design does not depend on any additional treatment provided by the third pond and estimates a nitrogen treatment and removal efficiency of approximately 70% and a BOD treatment and removal efficiency of approximately 80%. BOD removal efficiency will likely be higher given that existing lagoons have a BOD removal efficiency of 90% and that the replacement lagoons will be larger and have a longer hydraulic retention time. The predicted secondary lagoon effluent quality before discharge into the third pond, based on the above mentioned removal efficiencies, are as follows:

<u>Constituent / Removal Efficiency</u>	<u>Units</u>	<u>70 %</u>	<u>80 %</u>	<u>90%</u>
BOD <sub>5</sub>	mg/L	-	820	410
Total Nitrogen	mg/L	140	-	-

12. The 17-foot water level design depth of the primary lagoon is to allow it to accommodate approximately 20 years of accumulated of sludge without significantly impacting operating

efficiency. Sludge in this document refers to solid, semisolid, and liquid residues from the bottom of the Facility's lagoons.

13. The three proposed lined lagoons will need to be constructed before the old unlined lagoons can be cleaned up and closed. The proposed lined lagoons will be constructed under a time schedule in a separately issued cleanup and abatement order (CAO) that will also regulate the cleanup and closure of the unlined ponds and abatement of the effects of brine waste and brine waste combined with hide skinning waste that was discharged to them.

### **Hydrology, Soils, and Land Use**

14. The Facility lies within the Tulare Lake Basin, specifically the Hanford-Lemoore Hydrologic Area (No. 551.90) of the South Valley Floor, as depicted on interagency hydrologic maps prepared by the California Department of Water Resources (DWR) in 1986. Surface water drainage is to the valley floor. The Facility is not within a 100-year floodplain.
15. The three parcels comprising the 160-acre property are all within the Lakeside Irrigation Water District. As shown on [Attachment A](#), the Lakeside Ditch travels from east to west across the northern half of the property. The head of Settler's Ditch begins along the stretch of the Lakeside Ditch on the property and travels south down the approximate centerline of the property.
16. Hot dry summers and mild winters characterize the arid climate. The rainy season generally extends from November through March. Occasional rains occur during the spring and fall months, but summer months are dry. Average annual precipitation and evapotranspiration in the discharge area are 8.58 inches and 58.73 inches, respectively, according to information published by DWR.
17. The Facility is underlain by *Garces loam* and *Kimberlina fine sandy loam, saline-alkali*. These alluvium formed soils are deep, well drained, and saline-alkali. The Garces loam on the eastern two thirds of the property has very slow permeability while the Kimberlina fine sandy loam on the western third of the property has moderately slow permeability.
18. Land use in the Facility vicinity is primarily agricultural. Crops grown within two miles of the Facility include corn, cotton, and alfalfa according to DWR land use data published in 1996. Agricultural lands adjacent to the Facility are to the north, south, and west. Directly east are a number of rural residences and a tree recycling facility. Kit Carson School is a rural elementary school located approximately one-half mile to the northeast that serves between 400 and 500 Kindergarten through eighth grade students.

### **Groundwater and Vadose Zone**

19. The Facility is in Detailed Analysis Unit (DAU) No. 238 of the Tulare Lake Basin, as depicted on interagency hydrologic maps prepared by DWR. Regional groundwater gradient maps prepared by DWR for the Tulare Lake Groundwater Basin indicate that the depth to first encountered groundwater water at the Facility has varied from 70 to 100 feet bgs for select years (i.e., 1989, 1998, and 1999) assuming a ground surface elevation of approximately 250 feet. Groundwater self-

monitoring reports for sampling done between March 2001 and October 2003 (ten sampling events during thirty-two months) indicates depth to first encountered groundwater has varied between 70 and 94 feet with an average groundwater gradient of N 180° E (i.e., exactly due south) and a magnitude of 6 ft/1000 ft.

20. To determine the impact of the three unlined lagoons on the uppermost aquifer from the impounded brine waste and the hide skinning wastewater, the Discharger was required to install a groundwater-monitoring network around the unlined lagoons. Six-wells (MW-1 through MW-6) were installed to depths between 93 and 94 feet below ground surface (bgs) with 25-foot screen intervals across the water table. The boring logs for MW-1 through MW-6 indicate that the subsurface geology to that depth is comprised generally of sand and silt.
21. Groundwater and soil data show that waste constituents from the unlined lagoons significantly degraded groundwater. Groundwater monitoring results from wells MW-4 and MW-6 indicate significant increases in EC, TDS, sodium, chloride, and nitrate concentrations downgradient of the lagoons with no other potential sources for these constituents, at the levels found, within the vicinity of the Facility. Results from well MW-5 also indicate increases in concentrations of the above constituents that are likely from the lagoons, but may also indicate a contribution from the leach field used for disposal of the Facility's domestic wastewater. In addition, soil borings from the ground surface to the top of the water table confirm the transport of waste constituents from the unlined lagoons into groundwater, as soils horizontally within 20 ft of the lagoons contain waste constituents at levels one to two orders of magnitude greater than background soils.
22. The Facility's new supply well was put into service January 2002. The new supply was installed to meet increased water demand associated with higher animal processing throughput from the Facility upgrade and the need for greater onsite fire fighting capabilities. The old well remains a potential backup water supply. The new well is constructed to 500 ft below ground surface (bgs) and is screened between 260 ft and 500 ft bgs, drawing groundwater from both the confined aquifer (i.e., below the Corcoran Clay Member of the Tulare Formation, or E-clay) and overlying unconfined aquifer. Four samples collected between January and December 2002 characterize the source water from the new supply well as follows:

<u>Constituent / Parameter</u>	<u>Units</u>	<u>Value</u>
Electrical Conductivity	µmhos/cm	354
Total Dissolved Solids (TDS)	mg/L	245
Sodium	mg/L	66
Chloride	mg/L	22
Nitrate (as N)	mg/L	<0.2

### **Basin Plan**

23. *The Water Quality Control Plan for the Tulare Lake Basin, Second Edition*, (hereafter Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, and contains implementation plans and policies for protecting all waters of the Basin. The Basin Plan includes plans and policies of the State Water Resources Control Board (State Board) incorporated by reference. Pursuant to California Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
24. The Lakeside Ditch and Settler's Ditch are surface waters of the State and are classifiable as Valley Floor Waters. The Basin Plan designates the beneficial uses of Valley Floor Waters as agricultural supply; industrial service supply; industrial process supply; water contact recreation; noncontact water recreation; warm freshwater habitat; wildlife habitat; rare, threatened, or endangered species; and groundwater recharge.
25. The Basin Plan designates the beneficial uses of groundwater in DAU No. 238 as municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
26. Basin Plan water quality objectives to protect the above beneficial uses include a numerical objective for coliform and narrative objectives for chemical constituents in and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, or animals. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The Basin Plan establishes numerical water quality objectives that quantify maximum permissible concentrations for groundwaters designated as municipal supply. These include maximum contaminant levels (MCLs) in Title 22, California Code of Regulations (i.e., sections 64431 (Inorganic Chemicals); 64431 (Fluoride); 64443 (Radioactivity); 64444 (Organic Chemicals); and 64449 (Secondary MCLs - Consumer Acceptance Limits)).
27. Quantifying a narrative water quality objective requires a site-specific evaluation of each waste constituent for consistency with the narrative objective using the procedures set forth in the Basin Plan. These procedures require the consideration of, among other things, site-specific hydrogeologic and land use factors and relevant numerical criteria and guidelines developed or published by other agencies and organizations. The latter include the National Academy of Sciences, the University of California Cooperative Extension, and the Food and Agricultural Organization of the United Nations. Westcot and Ayers in a 1985 publication (*Water Quality for Agriculture, Food and Agriculture Organization of the United Nations — Irrigation and Drainage Paper No. 29*) provide detailed information to evaluate the quality of irrigation water necessary to sustain various crops. This publication is clear that considerable judgment should be used in applying the criteria and that appropriate irrigation management and crop variety selection can overcome some of the adverse impact where high water quality is not an option.

28. The major constituents of concern in assessing the quality of water for agriculture are salinity (expressed as EC or TDS), boron, chloride, and sodium. In general, animal uses are less sensitive than crops to these constituents. Salinity reduces crop growth by reducing the ability of plant roots to absorb water. The salt tolerance of crops also depends on the frequency and type of irrigation (e.g., drip, furrow, or sprinkler irrigation). Sprinkler irrigation has the greatest impact due to foliar absorption of salt. Absorption and foliar injury are further influenced by high temperature, low humidity, and drying winds, type of sprinkler, and timing of irrigation. A predominance of sodium relative to other ions in irrigation water may disperse soil aggregates, which in turn, affects virtually all crops by decreasing the permeability of the soil by water and air.
29. *Water Quality for Agriculture* provides general salt tolerance guidelines for many common field, vegetable, forage, and tree crops. Yield reductions can be avoided in nearly all crops when irrigating with water having an EC of less than 700  $\mu\text{mhos/cm}$ . There is, however, an eight- to ten-fold range in salt tolerance of agricultural crops. It is possible to achieve full yield potential with waters having EC up to 3,000  $\mu\text{mhos/cm}$  if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.
30. With respect to specific-ion toxicity, *Water Quality for Agriculture* indicates reductions in crop yields can be expected if sodium- and chloride-sensitive crops are sprinkler irrigated with water containing 69 mg/L sodium and 106 mg/L chloride. If such crops are not sprinkler irrigated, the maximum concentrations of sodium and chloride associated with no apparent yield reduction may increase, however the extent of the increase is typically crop specific.
31. In the process of crop irrigation, evaporation and crop transpiration remove water from and result in accumulation of residual salts in the soil root zone. These salts would retard or inhibit plant growth except for a fraction of irrigation water applied to leach the harmful salt from the root zone. The leached salts eventually enter groundwater and concentrate above the uppermost layer of the uppermost aquifer. As this is the general condition throughout the agricultural Tulare Lake Basin, water supply wells for all beneficial uses typically are constructed to extract groundwater from below this layer.
32. Groundwater in the area of the discharge is of substantially higher quality than the concentrations that implement water quality objectives. The impact caused by past discharge has significantly exceeded water quality objectives and feasibility of restoration has yet to be determined. The permitted discharge will not result in groundwater quality much different than ambient quality. Reasonable groundwater limitations based on translation of water quality objectives appropriate for the area of the discharge are as follows:

<u>Constituent</u>	<u>Units</u>	<u>Value</u>	<u>Relevant Beneficial Use</u>
Chloride	mg/L	106	Agricultural Supply (AGR)
Electrical Conductivity	$\mu\text{mhos/cm}$	700	Agricultural Supply (AGR)
Nitrate	mg/L	10	Municipal Supply (MUN)
Sodium	mg/L	69	Agricultural Supply (AGR)

33. Basin Plan maximum allowable effluent limits for discharges that recharge good quality ground waters are EC of 1,000  $\mu\text{mhos/cm}$ , chloride of 175 mg/L, and boron of 1 mg/L.
34. The Basin Plan requires industrial Dischargers to limit the EC increase in their industrial process wastewater to 500  $\mu\text{mhos/cm}$  over source water, or less if necessary to assure compliance with water quality objectives. The Basin Plan allows an exception for food processing industries that discharge to land and have a disproportionate increase in the EC attributable to organic dissolved solids from raw food product. Self-monitoring data ([Finding 9](#)) indicates that hide skinning wastewater is rich in organic acids and ions (i.e., approximately two-thirds of the TDS is volatile). To qualify for the food processing exception, the Discharger must demonstrate that it uses best management practices (BMPs) to control inorganic dissolved solids to the maximum extent feasible and that water quality objectives will not be exceeded.
35. An exception to the Basin Plan EC limit of 500  $\mu\text{mhos/cm}$  over source water is reasonable as: a) a disproportionate increase in the EC of the Discharger's hide skinning wastewater is attributable to organic dissolved solids (i.e., approximately two-thirds of TDS is volatile), b) the Discharger is implementing the BMPs described in more detail in the following findings, c) the discharge of hide skinning wastewater as proposed by the Discharger in its RWD will not result in the loss of beneficial uses of groundwater, and d) salt removal technology, such as reverse osmosis, would require a higher level of biological treatment than proposed by the Discharger, but would not measurably reduce the wastewater's threat to underlying groundwater compared with the control measures proposed by the Discharger (i.e., lined lagoons and blending with irrigation water to meet crop demand).
36. The Discharger identified and proposes to implement the following BMPs to eliminate onsite discharges of brine waste to areas other than to the Facility's 10,000 gallon above ground plastic brine holding tank:
  - a. All salt spills occur outside the curing area will be immediately cleaned up. Dry cleanup will be executed where feasible, with the salt discharged into a dry storage bin or bulk salt shipping container. If wet cleanup is performed, the saline water will be captured and discharged to the brine tank.
  - b. Salt will be unloaded either (1) as bulk salt directly from the delivery trucks to a salt storage bin, or (2) within bulk shipping containers (e.g., wooden boxes). During transfer of salt from the delivery truck to a bulk salt storage bin, particulate filters will be used to minimize escape of airborne particles of salt.
  - c. When practical the doors to the curing area will remain closed.
  - d. Hide transfer ports from the skinning area to the curing area are elevated so that salt migration back into the skinning area is prevented.



- e. The brine holding tank will be at least partially emptied when it reaches 90% capacity, if not before.
  - f. The beds of the trucks used to transport hides offsite will be lined with plastic.
  - g. After each “load out” of palletized hides, dry cleanup will be performed, with the solids discharged to a dry storage bin or bulk salt shipping container.
37. The Discharger identified and implemented the following BMPs to eliminate salt from the hide skinning wastewater:
- a. Engineered hide skinning, with hydraulic separation from the hide curing area to prevent salting wastewater from entering the hide skinning wastewater stream.
  - b. Periodically squeegeeing of bodily fluids off the concrete floor into the carcass-processing trough with no drain. All solids and fluids within the trough are loaded into trucks for rendering at the Discharger’s Kerman facility.
  - c. Use of biodegradable, low-dissolved solids cleaner in place of caustic cleaners used at similar facilities to reduce the dissolved solids loading to the hide skinning wastewater stream.

### **Waste Classification**

38. California Water Code section 13173 defines designated waste as “nonhazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding water quality objectives...” Brine waste and brine waste combined with hide skinning wastewater have concentrations an order of magnitude greater than respective water quality objectives and must be classified as designated waste.
39. *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, California Code of Regulations, section 20005, et seq., (hereafter Title 27) specify types of waste that must be fully contained and prescribes standards for containment, including for designated waste.
40. Title 27, section 20090(i), exempts designated wastewater from the containment requirements of Title 27 when stored within a fully enclosed facility, such as concrete sumps and the above ground holding tank. The storage of brine waste in the sumps and the 10,000-gallon above ground plastic holding tank at the Facility are exempt from Title 27.
41. The discharge of hide skinning wastewater authorized herein is exempt from the requirements of Title 27. The exemption, pursuant to section 20090(b), and set forth in more detail in later findings, is based on the following:
- a. The Board is issuing these waste discharge requirements.

- b. These waste discharge requirements implement the Basin Plan and allow discharge only in accordance with the Basin Plan.
- c. The wastewater does not need to be managed according to Title 22, California Code of Regulations, Division 4.5, Chapter 11, as a hazardous waste.

### **Wastewater Reuse**

- 42. The Basin Plan recommends that, when practicable, wastewater reclamation and reuse replace an existing use or proposed use of fresh water. Policies include measures that make it more difficult for a Discharger to propose a wastewater discharge that does not recycle water when feasible. Project reports for new or expanded wastewater treatment facilities may be required by Regional Board staff to include plans on why wastewater reclamation or reuse is not feasible. A discharge is not considered reclamation or reuse when wastewater applications exceed reasonable agronomic rates or result in crop yields below normal. Blending of effluent with groundwater is allowed when it promotes reuse in water short areas, but not to avoid reasonable wastewater treatment.
- 43. California Department of Water Resources Bulletin 118-80 published in 1980 identified the Tulare Lake Sub Basin, including DAU 238, as one of eleven in California in a condition of critical overdraft. The bulletin states, "A basin is subject to critical conditions of overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social or economic impacts." The 2003 update to Bulletin 118 contains no revision to the statewide critical overdraft evaluation contained in the 1980 edition. Hence, the discharge occurs in a water short area.
- 44. The water necessary to meet crop demand on the Facility's 124-acres of cropland comes from five sources: hide skinning wastewater, rainfall, Lakeside Irrigation Water District (LIWD) canal water, and groundwater pumped from two onsite agricultural wells. The salt character of each of these sources is as follows:

<u>Parameter / Constituents</u>	<u>Units</u>	<u>Chloride</u>	<u>Sodium</u>	<u>TDS</u>
Hide Skinning Wastewater	mg/L	140 <sup>1</sup>	180 <sup>1</sup>	700 <sup>1,2</sup>
Rainfall	mg/L	0.2	0.6	4.8
LIWD Water	mg/L	3.5	4.6	52.6
Ag Well No. 1	mg/L	33	85	300
Ag Well No. 3	mg/L	39	91	340

<sup>1</sup>Six Month Average discharge limit specified by this Order

<sup>2</sup>Fixed Dissolved Solids

45. The Discharger estimates that 775 acre-feet of water are applied to the 124-acres of cropland on an average annual basis to meet crop demand. The quantities of water applied by source are given in the table below. Lakeside Irrigation Water District supplies canal water on a limited basis in May, June and July. Because the quantity of canal water available is insufficient to meet crop demand, the Discharger depends on pumped groundwater. Without the reuse of hide skinning wastewater as irrigation water, the Discharger would pump an additional 28-acre feet of groundwater to meet crop demand.

<u>Source</u>	<u>Volume<sup>1</sup></u>	<u>% of Total</u>
Hide Skinning Wastewater	28 acre-feet	3.6
Rainfall	89 acre-feet	11.4
LIWD Water	254 acre-feet	32.7
Ag Well No. 1	145 acre-feet	18.7
Ag Well No. 3	<u>260 acre-feet</u>	<u>33.5</u>
<u>Total Applied</u>	775 acre-feet	100

<sup>1</sup> On an average annual basis.

46. Reuse of the hide skinning wastewater slightly increases the salt content of the overall irrigation water. The approximate calculated annual average salt content of the irrigation water with and without hide skinning wastewater, as well as the calculated change in quality between the two irrigation waters, are given in the table below. The addition of hide skinning wastewater to the irrigation water increases the salt concentration in the irrigation water, but the increase is small enough to make irrigation water with hide skinning wastewater virtually indistinguishable from the irrigation water alone.

<u>Parameter / Constituents</u>	<u>Units</u>	<u>Chloride</u>	<u>Sodium</u>	<u>FDS</u>
Irrigation Water – No Hide Skinning Wastewater	mg/L	21	51	196
Irrigation Water – With Hide Skinning Wastewater at the Three-Month Average Limit	mg/L	25	54	210

47. Reuse of the hide skinning wastewater is anticipated to increase the nitrogen concentration of the irrigation water from nondetect to 5 mg/L and the BOD concentration from nondetect to 30 mg/L. Discharge of the 9 million gallons of reuse water to the 124-acre land application area results in average annual nitrogen and BOD loadings of 90 and 500 lbs/acre, respectively. Nitrogen loading of 90 lbs/acre/yr is insufficient to meet the nitrogen demand of any double cropping pattern (of row crops) the Discharger might implement. The BOD loading results in an average daily loading of

less than 2 lb/acre, which is what a typical farm receiving recycled water from a municipal wastewater plant would receive.

### **Antidegradation**

48. State Board Resolution No. 68-16 (hereafter Resolution 68-16 or the “Antidegradation” Policy) requires that, in authorizing any discharge of waste, that the high quality waters of the State be maintained until it is demonstrated that any change in quality is consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality that exceeds water quality objectives.
49. Degradation of groundwater by constituents other than those specified in this Order (e.g., toxic chemicals), and by constituents that can be effectively removed by reasonable treatment is inconsistent with Resolution 68-16. Degradation of groundwater by waste constituents in the discharge after subjecting them to effective treatment and control may be determined consistent with Resolution 68-16 after consideration of reasonableness under the circumstances of the discharge. Some degradation of groundwater by the Discharger is consistent with Resolution 68-16 provided that the degradation is
  - a. limited in magnitude and extent;
  - b. restricted to waste constituents characteristic of the discharge not removable by best practicable treatment and control (BPTC) measures;
  - c. minimized by fully implementing, regularly maintaining, and optimally operating BPTC measures;
  - d. demonstrated to be consistent with water quality objectives prescribed in the Basin Plan; and
  - e. justified to be of maximum benefit to the people of California.
50. The Discharger provides or will provide treatment and control measures (described in earlier findings) for the discharge of the hide skinning wastewater and the brine waste to the degree that they constitute BPTC. The following were considered in making the BPTC determination:
  - a. new treatment lagoons will be constructed and lined with a composite liner;
  - b. the new lagoons will be monitored for leakage using leakage detection technology to be approved by the Executive Officer ([Task 1.a](#) of the CAO described in [Finding 13](#));
  - c. a groundwater monitoring network will be installed around the new lagoons to verify the effectiveness of lagoon liners and leakage detection technology;
  - d. brine waste is segregated, trucked offsite and discharged to a sewer with an ocean outfall;

- e. nitrogen loading to land will not be in excess of agronomic uptake;
- f. a low BOD loading rate of less than 1 lb/acre/day.

51. The minimal amount of degradation resulting from the discharge is reasonable and of maximum benefit to the people of California. The Discharger's business provides a critical service to the local farming industry by providing a hygienic method of disposing of dead animals. In addition, the discharger employs approximately 40 to 50 residents of Kings County.

### **California Environmental Quality Act (CEQA)**

52. On 10 July 2000, the Kings County Planning Commission approved Conditional Use Permit (CUP) No. 00-05 and adopted a Negative Declaration in accordance with CEQA (Public Resources Code section 21000, et seq.) to upgrade the Facility by constructing a 13,000 square foot building. The Initial Study cites Baker Commodities' July 1996 RWD as the basis for analyzing the potential environmental impacts of the Facility's wastewater discharge.
53. The Hydrology and Water Quality checklist in the Initial Study finds potentially significant impacts from item "a) Violate any water quality standards or waste discharge requirements" and item "f) Otherwise substantially degrade water quality" and no significant impacts from the other items. The Negative Declaration requires that the Discharger submit an amended RWD 120 days prior to an increase in discharge volume to mitigate any impacts from the increase. The Discharger's February 2003 RWD proposes an average daily discharge of 0.023 mgd on a calendar day basis.
54. The Initial Study finds that brine waste is contained in storage tanks and periodically hauled to Baker Commodities' Los Angeles Facility for treatment and disposal based on the Discharger's July 1996 RWD. Regional Board staff found in its inspection subsequent to the approval of the Negative Declaration by Kings County that the Discharger failed to adequately segregate its brine waste. The Discharger has subsequently implemented segregation of brine waste and off-site disposal.
55. The project as approved by Kings County could still result in potentially significant impacts on groundwater quality from:
- a. discharge of hide skinning wastewater to unlined lagoons.
  - b. discharge of waste constituents stored in lagoon sludge and soil beneath the unlined lagoons;
  - c. discharge of hide skinning wastewater to the land application area;
56. The following mitigation measures are necessary to mitigate or avoid the potentially significant impacts on groundwater quality, and are required herein and in the CAO.
- a. segregation of hide salting brine from hide skinning wastewater (Discharge [Prohibition A.3](#));

- b. construction of lined lagoons to handle hide skinning wastewater to replace existing unlined lagoons ([Task 1](#) of the CAO); and
- c. closure of the unlined lagoons in accordance with Title 27 ([Tasks 3 and 4](#) of the CAO).

### **General Findings**

57. California Water Code section 13267 states, in part, that:

In conducting an investigation specified in [§13267] subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

- 58. The technical reports required by this Order and the monitoring and reporting required by this Order and the attached Monitoring and Reporting Program No. \_\_\_\_\_ are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.
- 59. Domestic waste from the 40 to 50 full-time employees is discharged to a septic system regulated by the Kings County Department of Public Health.
- 60. Pursuant to California Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue discharge.
- 61. [Task 3](#) of the separately issued CAO requires the Discharger to submit a technical report that evaluates alternatives for cleanup and abatement and proposes groundwater concentration limits in accordance with Title 27, section 20400(a). Once [Task 3](#) is completed, this Order will be reopened and Groundwater Specifications herein will be updated pursuant to Title 27, section 20400(b).
- 62. The Discharger is not required to obtain coverage under a National Pollutant Discharge Elimination System general industrial storm water permit as the closest Standard Industrial Classification (SIC) code for the Facility is “2011 Hides, and skins, cured or uncured” which is within the meat packing category. No coverage is required because all processing of the animals is handled indoors and no industrial materials, equipment, or activities are exposed to stormwater.
- 63. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.

64. The Discharger and interested agencies and persons were notified of the intent to prescribe waste discharge requirements for this discharge and provided an opportunity to submit written views and recommendations and to be heard in a public meeting.
65. All comments pertaining to the discharge were heard and considered in a public meeting.

**IT IS HEREBY ORDERED**, pursuant to California Water Code sections 13263 and 13267, that Baker Commodities, Inc., as well as its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted there under, shall comply with the following:

*[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991. This attachment and its individual paragraphs are commonly referenced as Standard Provision(s).]*

**A. Discharge Prohibitions**

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous,' as defined in Title 23, California Code of Regulations, section 2521, is prohibited.
3. Discharge of waste classified as 'designated,' as defined in California Water Code section 13173, except the discharge of brine waste to the Facility sumps and above ground tank identified in [Finding 40](#), is prohibited.
4. Bypass or overflow of untreated or partially treated waste is prohibited, except as allowed in Provision E.2 of Standard Provisions.
5. Cross-connections between any potable water supply and piping containing reuse water are prohibited. As such, no physical connection shall exist between reuse water piping and any domestic water supply well, or between water piping and any irrigation well that does not have an air gap or reduced pressure principle device.
6. The discharger of domestic waste, other than to the existing on-site septic system, is prohibited.

**B. Discharge Specifications**

1. The monthly average daily discharge flow from the facility to the lagoons shall not exceed 0.035 mgd.
2. The discharge from treatment and storage lagoons shall not exceed the following limits:

<u>Constituent/Concentration</u>	<u>Units</u>	<u>Six Month Average<sup>1</sup></u>	<u>Daily Maximum<sup>2</sup></u>
Sodium	mg/L	180	270
Chloride	mg/L	140	210
Fixed Dissolved Solids (FDS)	mg/L	700	1050

<sup>1</sup> The "six month average" concentration is the arithmetic mean of measurements made during the current month and the five previous months.

<sup>2</sup> The "daily maximum" concentration is the highest measurement made on any single discrete sample or composite sample.

3. The 124-acre land application area shall be double cropped and irrigated at the reasonable hydraulic rate that- meets crop demand.
4. The discharge shall not have a pH less than 6.0 or greater than 9.0.
5. The Discharger shall preclude public access to the waste treatment and storage lagoons through methods such as fences and signs, or other acceptable means.
6. Objectionable odors originating at the lagoons or land application areas shall not be perceivable beyond the limits of the waste treatment areas at an intensity that creates or threatens to create nuisance conditions.
7. Lagoons shall be managed to prevent breeding of mosquitoes. In particular:
  - a. An erosion control plan should assure that small coves and irregularities are not created around the perimeter of the water surface.
  - b. Weeds shall be minimized through control of water depth, harvesting, and herbicides.
  - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
  - d. Vegetation management operations in areas in which nesting birds have been observed shall be carried out either before or after, but not during, the **April 1 to June 30** bird nesting season.



8. Freeboard shall never be less than [three](#) feet in any lagoon (measured vertically) or lesser freeboard if certified in writing by a California registered civil engineer as adequate to prevent overtopping, overflows, or levee failures.
9. As a means of discerning compliance with Discharge [Specification B.8](#), the Discharger shall install and maintain in each lagoon permanent markers with calibration indicating the water level at design capacity and available operational freeboard.
10. The Facility shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year frequency.
11. The three lined lagoons shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation during the winter.

**C. Groundwater Specification**

1. No waste constituent shall be released through the composite liner of the three lined lagoons in a concentration or mass that will cause groundwater to be degraded more than approved by the Regional Board pursuant to Title 27, section 20400(b).

**D. Sludge and Grit Specifications**

1. Sludge and grit shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27.
2. Sludge from the ponds shall be discharged off-site at an appropriately permitted facility. The Discharger shall submit a revised RWD for any proposed on-site discharge of sludge.
3. Any proposed changes in solids disposal practices shall be reported to the Executive Officer at least 30 days in advance of the change.
4. Grit application on site shall be managed and controlled in accordance with a written waste management plan (WMP) describing removal and disposal of liquid from the grit and BMPs for its land application. The WMP shall be subject to the written approval of the Executive Officer in accordance with [Provision E.7](#).

**E. Provisions**

1. The Discharger shall comply with *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991, which are attached hereto and by reference a part of this Order.

2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. \_\_\_\_\_, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
3. The Discharger shall keep a copy of this Order, including its attachments and Standard Provisions, at the Facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, California Code of Regulations, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
5. The Discharger shall use best practicable treatment and control, including proper operation and maintenance, to comply with terms of this Order.
6. **Sampling and Analysis Plan.** By **30 January 2006**, the Discharger shall submit a Sampling and Analysis Plan. The purpose of the Sampling and Analysis Plan is to insure sample results collected under this Order's Monitoring and Reporting Program are representative of site conditions and the media being sampled. The Sampling and Analysis Plan should cover the following for each type of monitoring (e.g., influent, effluent, groundwater):
  - a. Sampling objectives;
  - b. Pre-sampling activity;
  - c. Sample collection;
  - d. Field measurements;
  - e. Sample preservation and handling;
  - f. Sample control (including chain of custody);
  - g. Analytical procedures (field and laboratory methods);
  - h. Field and laboratory QA/QC;
  - i. Health and safety procedures pertaining to sampling.

The Plan must also detail how the Discharger will provide for comprehensive training of all staff and supervisors with sample collection and analysis, and monitoring and reporting oversight responsibilities. Training shall include proper techniques and procedures for equipment calibration, sampling, analyses, chain-of-custody, and reporting (e.g., data entry) to ensure that complete, timely and accurate monitoring reports are submitted to the Regional Board. An Employee Training & Responsibility Log signed by the individuals responsible for implementation shall be included in the Sampling and Analysis Plan and contain the following:

Name;

- a. Title;
- b. Responsibility;
- c. Phone Number;
- d. Read Sampling and Analysis Plan (yes or no);
- e. Trained on Duties (yes or no);
- f. Signature, and
- g. Date.

7. **Grit Characterization and Waste Management Plan.** 90 days prior to the onsite discharge of grit the Discharger shall submit a waste characterization and waste management plan for approval by the Executive Officer. The waste characterization and waste management plan shall propose a method of removal and disposal of liquid from the grit prior to land application and demonstrate that waste constituents in the subject waste will be consumed as a benefit in soil and/or by crops that will be commercially harvested and that no other waste constituent will be discharged in a concentration that will degrade underlying groundwater. The Plan shall also describe BMPs to optimize the benefits from the land application of waste and reduce or eliminate the chance that the discharge will result in a waste constituent being released in a concentration that will degrade underlying groundwater.
8. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to the Regional Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
9. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with the Regional Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

WASTE DISCHARGE REQUIREMENTS ORDER NO.  
BAKER COMMODITIES, INC.  
HANFORD HIDE SKINNING AND HIDE CURING FACILITY  
KINGS COUNTY

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10. The Regional Board will review this Order periodically and will revise requirements when necessary.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on \_\_\_\_\_.

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THOMAS R. PINKOS, Executive Officer

Order Attachments:

- Monitoring and Reporting Program
- A. Vicinity Map
- B. Facility Map
- Information Sheet
- Standard Provisions (1 March 1991 version)

SJK/DKP: 11/10/2005